

REMARKS

Applicants acknowledge with thanks the personal interview with the Examiner on August 1, 2007. Applicants confirm that the prior art of record does not teach or suggest a patch or other device or composition wherein both the first and second electrodes are in ionic communication with the same carrier. Applicants also submit, as explained below, that the Lahanas reference does not teach or suggest this or the claimed invention.

Claims 3-5, 8-14, 21, 22 and 24-31 remain in this application. Claims 6, 7, 15-20 and 23 have been cancelled without prejudice. Support for the amendment to claim 3 can be found throughout the specification, including Figs. 1-3, which show the same carrier separating the first and second electrodes from the skin. Claims 8, 9, 21, 29, and 30 have been amended to correct antecedent basis or to correct claim dependency. Accordingly, no new matter has been added.

Claims 3-14 and 16-25 were rejected under 35 USC 103 as being unpatentable over Fahim in view of Crisp et al. in further view of Sage et al., Joshi, Muller et al., or Phipps, in further in view of Ledger et al., Crawford et al., or EP 0337642 further in view of Gross et al. or Untereker et al., now further in view of newly cited US Patent No. 6,306,384 to Lahanas et al. The Examiner has restated the previous arguments about the references already of record. Specifically, the Examiner argues, “the Fahim patent discloses a method of treating acne on the skin, the method comprising applying to the skin electrochemically generated zinc ions...The Fahim patent does not disclose the use of an apparatus having an anode comprising of [sic] zinc. However, the application of zinc ions using a device having an anode comprising zinc is conventional in the art as evidenced by the teachings of Crisp et al.” Applicants respectfully disagree.

First, while Fahim et al. discloses the use of zinc ions, it does not teach or suggest electrochemically generated zinc ions. Rather, Fahim discloses compositions for topical application comprising zinc sulfate and ascorbic acid. One of ordinary skill in the art would not look to combine the teaching of Fahim with that of electrolytic devices. Second, the device of claim 3 requires said first conductive electrode be in electric communication with said second conductive electrode. Such a configuration is not disclosed in Crisp et al. For example, as disclosed in Crisp et al., col. 2, lines 63-65, “[t]he plurality of openings is defined by a plurality of inner surfaces that together have an inner surface

area, with the plurality of inner surfaces comprising silver. The device also includes a second region comprising a metal-bearing material other than silver. The second region does not touch the first region.” As the metals are not in contact with each other, they are not in electric communication as recited in claim 1.

The Examiner further asserts that Ledger et al., Phipps, Crawford et al., or EP 0337642 suggest the conventionality of designing an apparatus wherein both the first conductive electrode and the second conductive electrode are in ionic communication with the carrier. However, Ledger et al. describes a device wherein both the first conductive electrode and the second conductive electrode are not in ionic communication with the carrier. Rather, Ledger et al. contains an “electrical insulator 20” between the electrodes. See col. 5, lines 51-55. Similarly, Phipps also discloses a device where electrodes 31 and 45 that deliver electricity into the skin are not in ionic communication with the same carrier (see Fig. 2 of Phipps et al.). Paragraph 42 of Crawford et al. states, “[i]n using the present device for iontophoretically enhanced drug delivery, a separate electrode of opposite polarity to the patch electrodes may be used in order to generate the potential gradient across the artery or other body tissue. This electrode is positioned elsewhere on or in the patient's body (usually the skin) and may be attached using any known means, such as ECG conductive jelly. Alternatively, a catheter electrode may be used as the second electrode.” Thus, this separate electrode is clearly not in contact with the same carrier as the patch electrode. Lastly, EP0337642 also fails to disclose or suggest such a device, see, e.g., col. 10, lines 49-58 and Figure 16 where the electrode 43 is attached directly to the skin such that current passes from the human or animal body to the electrode 43.

With respect to the Gross et al. patent, claim 3 herein recites the limitation “wherein said device is adapted to be affixed to said skin and to deliver electric current from said first conductive electrode, through said carrier, through said skin, and through said carrier to said second conductive electrode.” Such a device that delivers electric current to the skin is not disclosed or suggested by Gross et al. Rather, Gross et al. discloses a passive patch (See col. 2, lines 3-5 of Gross et al.), as acknowledged by the Examiner.

None of the previously cited, remaining references arrive at the claimed invention. This was agreed to in the interview of August 1, 2007.

Lahanas et al. is cited to show “a design wherein the first electrode and the second electrode are in ionic communication with the same carrier...” The Examiner argues Lahanas et al. disclose a method for preventing or treating skin damage which comprises applying to the skin a cosmetic or pharmaceutical composition containing an effective amount of compound capable of acting as an electron donor simultaneously or substantially simultaneously with the application of a composition containing an effective amount of a compound capable of acting as an electron acceptor. The Examiner asserts it would therefore be obvious to modify Fahim with a design wherein both electrodes are in the same carrier.

Contrary to the Examiner’s position, the Lahanas et al. patent does not teach or suggest a device wherein the first and second electrodes are in ionic communication with the same carrier. A close reading of Lahanas et al. reveals that the electron donor and electron acceptor compounds are never in physical or electrical contact. They interact with each other only ionically through the skin, which acts as a conductive, ionic medium. When they are combined in a single carrier, that carrier is nonconductive:

To prevent unwanted interaction between the two “electrodes”, the anode and cathodes components are preferably packaged separately...On the other hand, if a non-ionic, non-conductive matrix, for example a water-in-oil emulsion, is used, the two electrode components can be combined in the same nonconductive carrier...and no premature generation of current will occur. The skin itself, being conductive, can provide the necessary electrolyte function, and the single carrier containing both electrodes can be applied simultaneously and directly to the skin, thereby generating the potential once it is in contact with the skin.

Column 3, lines 20-49 (emphasis added). The preferred embodiment of Lahanas et al. is binding the ionic electrode components, separately, to an ion exchange resin, again to prevent interaction between them. Note the Examples. Separate anode and cathode polymeric particles are prepared. Only if a nonconductive carrier is used can the two polymeric particles of Lahanas et al. be in the same medium.

The Lahanas et al. reference teaches away from the presently claimed invention. Claim 3 requires use of a device in which the first and second electrodes are in ionic

communication with the carrier. Accordingly, the Lahanas et al. patent does not cure the defects of the references previously cited. Applicants respectfully request that this rejection under 35 USC 103 be withdrawn.

Applicants respectfully submit that the above-captioned application is now clearly in condition for allowance. Accordingly, favorable reconsideration of the above remarks and an early Notice of Allowance are courteously solicited. If the Examiner has any comments or suggestions, the Examiner is requested to telephone the undersigned Attorney at his earliest convenience.

Respectfully submitted,

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